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UNIVERSITY OF ALBERTA

TOTAL QUALITY MANAGEMENT IN POSTSECONDARY EDUCATION

BY

IRENE C. MAKAR

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of MASTER OF EDUCATION

IN

ADMINISTRATION OF POSTSECONDARY EDUCATION

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA
SPRING 1994

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled TOTAL QUALITY MANAGEMENT IN POSTSECONDARY EDUCATION submitted by IRENE C. MAKAR in partial fulfillment of the requirements for the degree of MASTER OF EDUCATION in ADMINISTRATION OF POSTSECONDARY EDUCATION.

E. A. Holdaway

J. Fris

A. K. Deane

December 15, 1993

DEDICATED TO

my late brother, David William Makar, whose supportive and protective presence was perceived

and to

my son, Kyle Quentin Lepage, for the opportunity of continual growth that only a son like mine could provide. My concern for the quality movement within higher education was motivated by the wish for him to eventually experience the intrinsic rewards of higher education, that I have experienced. Good Luck to you forever.

and to

my parents, Harry and Annie Makar who provided me with a healthy disposition to cope with pressures of society.

ABSTRACT

The purpose of this study was to assess the extent of support for the elements of Total Quality Management (TQM) in a postsecondary institution. The findings of this study could be employed as a guide to assess the necessary preliminary steps required for successful implementation of TQM.

Responses were obtained in interview format from 10 faculty members of a postsecondary institution. From the responses, the extent of support for each of the elements was ascertained.

In regards to the extent of support for the TQM elements in a postsecondary institution, the findings of the study are generally consistent with the research literature.

The recommendations for successful implementation of TQM are derived from comparisons of the findings with the research literature. The findings suggest that a profound knowledge of the TQM philosophy is required by upper and middle managers of postsecondary institutions. It is also suggested that managers should be the catalysts of the TQM movement by applying the philosophy to their functions. When managers are actively involved and can demonstrate their progress toward quality improvements, their commitment to the TQM philosophy will be communicated throughout the institution.

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CHAPTER 1

INTRODUCTION

The growth of the quality movement in higher education developed from the following five social forces, that are identified by research, to be the most important issues of higher education in the 1990s:

1. An increase in public disenchantment with educational institutions and the perceived decline of quality in education (Cornesky, McCool, Byrnes, & Weber, 1992; Blackburn, 1984; Mayhew, Ford, & Hubbard, 1990; Hollins, 1992; Seymour, 1992);

2. Declining financial resources (Seymour, 1992; Corts, 1992; Cornesky, et al., 1992; DeCosmo, Parket, & Heverly, 1991; Marchese, 1991);

3. The rise of mediocrity in academic programs (Mayhew, et al., 1990; Seymour, 1992);

4. Lack of agreement over what constitutes quality in higher education (Mayhew, et al., 1990; Blackburn, 1984; Corts, 1992; Seymour, 1992); and

5. The pressures of accountability (Seymour, 1992; Seymour & Chaffe, 1992; Cornesky, et al., 1992).

This concern for quality is amplified by the movement of some corporations towards approved suppliers of graduates. In other words, the postsecondary institutions that are not involved in the quality movement and whose

curricula do not meet the quality standards of business are finding that their graduates are less likely to be hired (Tausz, 1993, p. 24).

The above concerns call for a reassessment of how postsecondary institutions perform their functions to fulfil their mandate. A suggested guide to assist postsecondary institutions in this reassessment is the philosophy of "Total Quality Management (TQM)." According to Cornesky et al. (1992), administrators can effect meaningful change over the next several decades by instituting a TQM philosophy as a process for guiding colleges and universities toward Total Quality Improvement (TQI). If postsecondary institutions follow the recommendations of the "quality gurus," such as W. Edwards Deming, Philip Crosby, Joseph Juran, and Masaaki Imai, they will have these aspects:

-constructive competition;

-shared values and unity of purpose;

-collaboration on broad issues;

-simultaneous and synergistic planning;

-emphasis on responsibility to contribute;

-team accountability;

-constancy of purpose;

-and most, importantly, a superior professoriate, student body, and administration (p. 9).

The TQM philosophy assists in transforming organizations so that they include the aforementioned

aspects, and has increasing global support from postsecondary institutions. To enhance the TQM movement are reputable publications such as the periodical Total Quality Management, edited by Gopal K. Kanji (1993), a professor of Sheffield Hallam University, U.K., also known as the European Master of TQM. This periodical contains state-of-the-art publications on the implementation of TQM in postsecondary institutions by international authors. Another reputable example, New Directions for Institutional Research, (Sherr & Teeter, 1991), a North American Publication, published an entire series on the topic of TQM and has supported the TQM topic in subsequent issues.

This study reported in this thesis investigated the extent of support for the TQM philosophy in a postsecondary institution.

Problem Statement

The purpose of the study was to obtain information relevant to the following question:

What are the perceived potential aids and impediments to the implementation of Total Quality Management approaches at a postsecondary institution?

The following specific questions were relevant to the major research question and guided the development of the study:

1. What aids and impediments are identified most frequently?
2. What factors are perceived to cause these impediments?
3. What procedures could be used to reduce the effects of these impediments?

These questions served two purposes: (a) to direct the interview questions towards determining the extent of support for the TQM elements, and (b) to determine the procedures that could be employed for successful implementation of TQM in programs of a postsecondary institution.

Significance of the Study

The results of this study should have practical significance for several groups. These include the faculty members and administrators of the programs where the research was conducted, as well as those in other divisions and programs of the same institution and in other postsecondary institutions.

The practical significance of this study was to ascertain the extent of support for the TQM elements and consequently to identify the perceived potential aids and impediments to implementation of the TQM philosophy. Also of practical significance was identification of the external processes that could influence quality performance of the programs where the research was conducted.

Definitions of Terms

Total Quality Management (TQM)--A comprehensive approach to improving quality by transforming the organization from a controlling and results-oriented system to a supportive, client-focused organization. This requires continuous management support and commitment, improvement of systems and processes, elimination of waste, reliance on factual data for decision making, and an emphasis on open communication, teamwork, and innovation (Alberta Personnel Administration Office, 1992).

TQI--Total Quality Improvement; and

CQI--Continuous Quality Improvement. These terms are used interchangeably with the term "TQM" and also pertain to the effect of TQM in related research and literature. This usage applies in this thesis, unless stated differently.

Re: usage of terms TQM, TQI and CQI--The implementation of TQM, TQI, and CQI does not suggest that quality is poor at present, but it does suggest that the application of TQM principles will assist in identifying existing and non-existing quality attributes and in leading to improvements in quality.

Postsecondary Educational Institution--This term refers to an educational institution above high school level.

Universities, colleges, postsecondary institutions, and higher education are used interchangeably throughout the thesis.

Statistical Process Control--A method to measure improvement of quality and productivity.

Rework--Time spent fixing earlier mistakes.

Scrap--Useless work that has to be done over.

Complexity--Extra steps that add no value to a product or service.

Unquality work--Encompasses these terms: rework, scrap, and complexity.

Non-conformance costs--Encompasses the costs of doing something over rather than doing it right the first time.

Value-added--Something added to increase the worth of an existing state.

Education and Training--These terms are used interchangeably throughout the thesis when applied to the acquiring of TQM knowledge.

Aids--Policies, procedures, resources, and attitudes that are likely to ensure that TQM is successfully implemented.

Impediments--Lack of or negative policies, procedures, resources, and attitudes that are likely to obstruct successful implemention of TQM.

Efficiency--Achieving objectives of the organization at minimal cost.

Effectiveness--The extent to which the objectives of the organization are achieved.

Limitations

The effectiveness of the study in identifying aids and impediments to implementing TQM was subject to the following limitations:

1. the knowledge and foresight of staff in the sample selected;
2. the attitudes of respondents toward TQM; and
3. the knowledge of respondents about TQM.

Delimitations

The study was delimited in these ways:

1. three programs in a postsecondary institution;
2. one postsecondary institution; and
3. a sample of 10 faculty members.

Organization of the Thesis

The thesis has five chapters. The problem statement and related research questions are identified in this first chapter. A brief background to the study and discussions that relate to purpose, significance, limitations, and delimitations, are also included. The literature on the topic is addressed in Chapter 2. Presented in Chapter 3 is a description of the research methodology, including a discussion of procedures used for development of the interview schedule, and the nature of data collection and analysis. Chapter 4 includes a presentation of the findings

and concludes with a summary of the findings. The final chapter summarizes the thesis and presents the conclusions and recommendations.

CHAPTER 2

REVIEW OF THE LITERATURE

This literature review is organized into the following sections: (a) introduction of what research concludes about the current state of postsecondary institutions; (b) definition of Total Quality Management (TQM); (c) rationale for implementation of TQM; (d) philosophies of the TQM leaders who are the "quality gurus"; (e) elements of TQM illustrated to define the TQM philosophy, functionality, and relevance in a postsecondary setting; and (f) research findings on the shortcomings of TQM.

Current State of Postsecondary Institutions

Gale (1992) has suggested that universities should be more than just seekers after truth and the unknown. They also should lead society in competitive, growth, and development aspects. Therefore, universities should not be following the initial responses of industry by downsizing, freezing positions, collapsing vacant positions, cutting budgets, and attempting to forestall the possibility of radical changes such as merging, consolidating, or closing of departments and/or programs. Both Dooris and Lozier (1990) and Gale (1992) agreed that higher education is continually hearing about retrenchment, stringency, uncertainty, reduction, and decline, but as Kehoe (1993)

recognized, with fewer people to do the same amount of work, morale may plummet and service quality may decline quickly.

Unlike private sector firms, universities are not reducing costs to compete for a share of the market, but for a share of the very limited resources available to support public institutions. This competition for budget share exists not only between universities and other publicly supported organizations, such as hospitals, but also among universities and between the administrative and academic units of individual campuses (Dooris & Lozier, 1990; Gale, 1992; and Kehoe, 1993). The problem is explained by Kehoe (1993) who stated that in the marketplace, a poor service provider might lose market share over a period of years, whereas a university administrative unit perceived to be providing inferior service could lose its budget share in a matter of months. He suggested that one of the most effective ways that administrators can free themselves of this current state is to reorganize the work of their units using the management style of TQM.

Definition of TQM

TQM is a comprehensive system for developing institution-wide participation in planning and implementing a continuous improvement process by transforming the organization from a controlling and results-oriented system to a supportive, client-focused organization. TQM

facilitates the shared governance concept of preserving diversity but includes connecting the diverse parts to make an inclusive whole (Heverly & Cornesky, 1992; Further Education Unit, 1991; and Jenkins, 1992). In assisting organizations to connect diverse parts to make an inclusive whole, TQM provides a central unifying focus. Seymour and Chaffe's (1992) description of TQM elucidates that unifying focus: "TQM is simple and straightforward, quality comes first; everything else is second" (p. 26).

TQM is founded on the concept of continuous improvement rather than instant improvement features such as downsizing, freezing positions, and collapsing vacant positions. TQM emphasizes how the institution does its work (the processes) in relation to customer needs, not its products or outcomes. Processes are identified and studied, and data are gathered to understand how the processes are operating. The goal is to continuously improve processes since better processes should yield better outcomes. This approach is preventive in nature. TQM identifies characteristics of processes that lead to inefficiencies or to unwanted results. It then reduces inefficiencies by preventing the characteristics that have been identified to lead to unwanted results. TQM not only identifies inefficiencies by the study of processes but also is thought of as a metaphor for the management of change. This management style realigns the mission,

culture, and working practices of an organization to the pursuit of continual quality improvement (CQI).

A TQM culture is predicated upon a commitment to customers' interests, needs, requirements and expectations, and upon the commitment of everyone in the organization to the constant improvement of the quality of everything an organization does and provides for its customers. Furthermore, it is a TQM belief that managers must do more than just tell employees to improve the process. They must provide the necessary means and tools required to make the stated improvements in the process (Cornesky et al., 1992).

The resultant culture and working practices are designed to continually improve inputs, processes, and in turn, outcomes (Heverly & Cornesky, 1992; and Further Education Unit, 1991).

Rationale

This section of the thesis supports the rationale for reassessment of how postsecondary institutions perform their functions to fulfil their mandate. The rationale for the reassessment will concentrate around the following social forces, identified through research, as the most important issues of higher education for the 1990s: (a) an increase in public disenchantment with educational institutions and the perceived decline of quality in education (Cornesky et al., 1992; Blackburn, 1984; Mayhew, et al., 1990; Hollins,

1992 & Seymour, 1992); (b) decline of financial resources (Seymour, 1992; Corts, 1992; Cornesky et al.; DeCosmo, et al., 1991; and Marchese, 1991); (c) rise of mediocrity in higher education programs (Mayhew et al., 1990; Seymour, 1992); (d) lack of agreement over what constitutes quality in higher education (Mayhew et al., 1990; Blackburn, 1984; Corts, 1992; Seymour, 1992); and (e) pressures of accountability (Seymour, 1992; Seymour & Chaffe, 1992; Cornesky et al., 1992).

The aforementioned social forces provided the rationale for the implementation of the TQM philosophy. Some researchers recommend "the TQM philosophy" as a guide to assisting institutions in reassessing how they perform their functions in fulfilling their mandate. A discussion of the rationale follows.

Some researchers, (e.g., Cornesky et al., 1992; Blackburn, 1984; Mayhew et al., 1990; Hollins, 1992; Seymour, 1992), have proposed that the presumed ineffectiveness of higher education has stemmed from **public disenchantment with educational institutions** (Blackburn, 1984) and **the perceived decline of quality in education** (Hollins, 1992, p. 115). There seems to be a common inference among the researchers (Cornesky et al., 1992; Blackburn, 1984) that the average graduate of our schools and institutions today is not as well educated as was the average graduate of 25 or 35 years ago. Institutions of

higher education often claim that their graduates are liberally educated and able to speak, read, write, and analyze critically. However, far too many graduates do not speak, read, and write well enough to satisfy employers and others who expect college-level communication skills. Mayhew, Ford, and Hubbard (1990) and Seymour (1992) agreed that the following are deficiencies of postsecondary education in the U.S.: (a) the baccalaureate degree lacks credibility, since it is only marginally relevant for tomorrow's world; and (b) the unclear goals of higher education render impossible a consensus of what essential knowledge, skills, and experience every college-educated person should have.

The mentioned deficiencies in higher education could be addressed by aligning or shifting the focus from the desires of the internal community (administrative procedures and faculty) to the requirements of the population outside the system, especially the customers--students, industry, and funding agencies. A TQM culture is predicated upon a commitment to customers' interests, needs, requirements, and expectations, and upon the commitment of everyone in the organization to the constant improvement of the quality of everything the organization does and provides for its customers. This shift of focus to the customers' needs would assist in identifying what are the requirements of the baccalaureate degree and also would satisfy the requirements

of those industries that are already moving toward approved suppliers of graduates (Blackburn, 1984; Tausz, 1993; Seymour 1992). According to Henry Conn, an Atlanta-based vice-president of A.T. Kearney (cited in Tausz, 1993) industries are moving toward approved suppliers of graduates because of spending upwards of $40 billion a year on education and training for their work force. He contends that the figure is double what it should be and that companies are saying "If you do not use TQM techniques to improve, your graduates will be too expensive for us to use" (p. 24).

The **decline of financial resources** led to the second rationale for the need to reassess how institutions of higher education perform their functions to fulfil their mandate. Corts (1992) and Seymour (1992) agreed that higher education institutions have the mindset "If you give me enough money, I can give you quality," and that every professor in every program believes that he/she could do a considerably better job if only the dean or vice-president would provide more money. This mindset has evolved over the years because institutions "paper over" their mistakes with money since the solving of problems and making improvements meant spending more money. The fact that there is little correlation between resource size and the effectiveness of the processes that are to transform inputs into outputs is ratified by Carl Schramm, the president of the Health

Insurance Association of America: "There is no firm evidence that Americans are healthier than a decade ago, although they are spending vastly more for health care" (Seymour, 1992, p. 5). Colleges add more staff, build new facilities, purchase more equipment, enroll more students, and temporarily make many problems less visible, even if they are not solved.

Educational institutions are not alone in "papering over" their mistakes by spending more money. Many businesses now realize that time spent fixing earlier mistakes (rework), is useless work that has to be done over (scrap), and the extra steps that add no value to a product or service (complexity), can equal 35% of the total cost of doing business. Research suggests that higher educational institutions spend about 40% of total operating costs performing what TQM calls "unquality" work that is the "scrap," "rework," and "complexity."

Like many companies that have employees specifically hired to do rework, postsecondary institutions have people assigned to check and re-check something as simple as generating a catalog or schedule of courses. This is along with faculty teaching and making additional salaries in continuing education. This is inferred to be the corrective action (rework) of higher education institutions for re-educating employees who were inadequately prepared initially (Seymour, 1992; Corts, 1992; Cornesky et al., 1991; DeCosmo

et al., 1991; Marchese, 1991). Cornesky et al. (1992) acknowledged the need for continuing education in order to stay current in certain fields, but drew attention to the fact that divisions of continuing education at "better ranked" institutions continue to generate profits in the millions of dollars doing what should have been done by many institutions during the undergraduate education experience.

Another example of expensive rework is not being able to see the "cost of lost business" when having to recruit students to fill vacancies created by student attrition. Seymour (1992) explained this quite clearly:

> Take tuition, room, and board and multiply their sum by three more years. Don't forget the books, snacks, and T-shirt purchases at the book store each year. Multiply by three again. Add in the occasional parents' visit. Then you might want to also include the long run. What's your average annual alumni gift? Multiply by 50. Now let's start calculating replacement costs. If instead of losing half of your first-year class before graduation you only lost 25 percent, how would that affect your operations? Well, you would have to recruit one-third less students with a concomitant decrease in admissions officers, catalogs, and so on (p. 139).

According to an Admissions Marketing Group survey of 1990 (cited in Seymour, 1992) it costs about $2,400 (U.S.) to recruit a single student. This figure does not include the cost of lost business as explained in the above quote and the incalculable cost of loss of goodwill that extends into the hiring community.

The antecedent example offers a clear view of how part of one department's process (the student attrition rate) is not seen as having an effect (the revenue loss) on other departments. Therefore, the TQM paradigm of viewing a system (the entire institution) as interconnected processes to make inefficiencies more easily identifiable, exemplifies how TQM offers tools and principles to control costs while improving quality.

The TQM philosophy also has the aims of becoming competitive, staying in business, and providing jobs. Being competitive does not suggest being mediocre. Research has shown that the diversification strategy of postsecondary education in continually offering new lines of programs, each with its own options, has led to a menagerie of unrelated academic courses. Also, in the quest to offer all programs, these programs are losing their distinctiveness, which in turn has led to the third issue facing higher education, **the rise of mediocrity**.

Research suggests that a critical perspective for those concerned with improving quality of education should be a realistic view of what higher education can offer with distinction (Mayhew et al., 1990; Seymour, 1992). Quality should be an integral aspect of distinction. However, the **lack of agreement on what constitutes quality in higher education** is the fourth issue facing higher education, and according to TQM gurus, this in itself impedes quality

(Mayhew et al., 1990; Blackburn, 1984; Corts, 1992; Seymour, 1992). There is also an inference that defining quality by sayings such as, "We in higher education know in our bones" (Seymour, 1992, p. 26), and "I cannot define it but I know it when I see it" (Blackburn, 1984, p. 61), or trying to define quality in terms of facilities has little or no clout beyond campus walls. Defining quality when focusing on the assets of the institution does not define quality in terms of what we are providing for our students. Seymour (1992) stated that,

> We are expecting students to make a $100,000 investment with less hard information than if they were buying a $20 toaster. The quality story will be told, one way or another. Either it will be told by us or it will be purchased at a newsstand for $3.95. (p. 174)

Various authors (Mayhew et al., 1990; Blackburn, 1984; Corts, 1992; Seymour, 1992; Cornesky et al., 1992) also suggested that if quality and innovation were primary factors in planning, they would be reflected in resource allocation.

There will undoubtedly be continuing controversy surrounding the study of quality and, unfortunately, what constitutes quality is often a subjective judgement. One of the cornerstones of TQM is the emphasis on information-based decision-making, while minimizing the use of the "best guess" or "gut feeling" type of speculation. The information-based, decision-making aspect of TQM also can lessen the **pressures of accountability**, the fifth identified

concern of higher education. Hollins (1992) and Seymour (1992) concur that government, industry, and citizens all pay money to support colleges and universities. As Seymour (1992) stated,

> They, in effect, purchase an educated citizenry to support the democratic system. They purchase consulting and research services to help run the government and they purchase the graduates of higher education to fuel economic development. (p. 51)

Consequently, they have every right to expect quality and to see evidence of sound management and budget controls to justify increased expenditures (Hollins, 1992; Seymour, 1992). Seymour (1992) acknowledged also that even though educational institutions require a considerable degree of autonomy and flexibility, so that professors have the freedom to teach and research without politicized interference, they also need the involvement of government as a force for accountability. He therefore concluded that the problem is not to eliminate the government's role, but to support it. TQM's approach of data-based decisions could help support government's role by providing data-based speculations and information supporting the accountability of postsecondary institutions rather than the current preoccupation with assessment of quality in terms of seeking to measure the extent to which educational programs produce intended results. However, according to Seymour and Chaffe (1992) and Cornesky et al. (1992), this narrow focus on student outcomes may satisfy the demand for accountability

required by external clients, but if assessment were done as part of a larger quality-improvement effort, it could also aid institutional effectiveness.

This is where the broader approach to assessment that embodies the TQM principles can create an opportunity to define quality in terms of accountability and also provide continuous improvement of an institution's functions. Administrators can produce meaningful change over the next several decades by instituting a TQM philosophy as a process for guiding colleges and universities toward TQI. If institutions of higher education were to follow the recommendations of the "quality gurus," such as W. Edwards Deming, Philip Crosby, Joseph Juran, and Masaaki Imai, they would have these characteristics:

> -constructive competition;
>
> -shared values and unity of purpose;
>
> -collaboration on broad issues;
>
> -simultaneous and synergistic planning;
>
> -emphasis on responsibility to contribute;
>
> -team accountability;
>
> -constancy of purpose;
>
> -and, most importantly, a superior professoriate, student body, and administration. (Cornesky et al., 1992, p. 9)

The aforementioned aspects of the TQM philosophy should assist in a cultural transformation of the organization towards Total Quality Improvement (TQI).

Philosophies of the TQM Leaders Known as the "Quality Gurus"

The Deming Approach

W. Edwards Deming is the pioneer for stressing quality. Deming's philosophy involves a 14-step process for managers to improve quality and productivity with the use of Statistical Process Controls (SPC) to measure improvement of quality. His approach is humanistic and treats people as intelligent human beings who want to do a good job. The Deming approach advocates the notion of controlled process and/or systems as opposed to controlled personnel. He "hates" managers who believe that workers are responsible for quality problems.

Deming was partly responsible for the economic turnaround of Japan in the 1950s. The Japanese were exporting quality goods within five years after Deming convinced and encouraged Japan's top managers to produce quality items for Western consumption by using SPC and his 14-step process (Appendix B). In recognizing Deming's contribution to the economy, Japan's Emperor awarded Deming the Second Order Medal of Sacred Treasure in 1960 (cited in Cornesky et al., 1992, p. 15).

The Juran Approach

Juran's philosophy (cited in Cornesky et al., 1992) indicates that poor planning by management results in poor quality. Juran believes managers must establish top-level plans for annual improvement, and encourage projects as a means to achieve improvement. The approach is in the study of processes and/or systems. Juran advocates, "If it ain't broke, then break it," because if an attempt is not made to improve a process, improvements will never occur. His approach is in planning, controlling, and improving of processes using statistical tools. This is known as the Juran trilogy. The Juran trilogy is explained in detail in Appendix C.

The Juran approach is comfortable for "boss-type" managers, it makes them feel more in control.

The Crosby Approach

Crosby's approach (cited in Cornesky et al., 1992, p. 38) seems to appeal to the human resource type of managers since he believes that managers should be facilitators rather than punishers sent from God.

He enforces the belief that quality should be a universal goal and that managers must provide the leadership to develop a system in which quality is never compromised. He believes the key to quality is "prevention." The Crosby system encourages a performance level of zero defects and measures quality as the price of non-conformance. Non-

conformance is doing something over rather than doing it right the first time. Like Deming, Crosby has 14 steps (Appendix D) to institute quality improvement (Cornesky et al., 1992).

The Imai Approach

Imai (cited in Cornesky et al., 1992) supports the continuous improvement process where people are encouraged to focus on the processes and systems in which they work, rather than on the results. In this approach the belief is that by continually improving the processes, the end result will be a better product or service. This has become known as the "P" or "process approach," rather than on the "R" or "results approach" of Frederick Taylor (1911), known as the Father of Scientific Management (Starke, Mondy, Sharplin, & Flippo, 1988). This approach is also known as the "Kaizen" approach. "Kaizen" in Japanese means "continuous improvement" and is extremely people-oriented. This process is detailed in Appendix E.

Elements of TQM

The above philosophies of the "quality gurus" are integrated into the following eight TQM elements, as identified by research, in order of importance to postsecondary institutions. For a traditional organization to evolve to a TQM environment, all these elements will influence the transition of the organization. As mentioned

before, the transition is not a rapid one and may take several years to align the organization's culture with the long-term TQM vision. Therefore TQM must be viewed as a process which develops at various rates in different departments and branches, and cannot be "programmed" into an organization with specific completion dates and results (Alberta Personnel Administration Office, 1992). The procedure employed to identify the eight TQM elements pertinent to higher education from Deming's 14 elements is depicted in Appendix F.

The eight TQM elements pertinent to achieving cultural transformation of a postsecondary institution toward TQI are listed and described below.

1. **Adopting a new philosophy**. This element takes the view that we are in a new economic age where management must awaken to the challenge, learn its responsibilities, and take on leadership to provide for direction and change.

Deming (cited in Walton, 1986) stated that 94% of the problems in an organization are the results of poor management or are at least the responsibility of management. He believed that people work in the system designed by managers and the main job of managers is to improve the system with the help of the workers.

Several authors, (Cornesky et al., 1992; Gitlow and Gitlow, 1987; and Walton, 1986) concede that the challenge of the new economic age is ensuring that the needs and

expectations of every internal and external client are met; customer satisfaction is the ultimate goal. This concept in postsecondary education involves not only satisfying the students' needs (the external clients), but also looking at how the work we do affects the next person or process (our internal clients). For example, how do entrance requirements affect the quality of teaching and learning?

2. **Breaking down barriers between departments and encouraging teamwork**. Quality issues are tackled by cross-functional teams. These are self-directed work groups with their own required competencies and protocols. Unlike committees, teams are not representative. They bring together most or all of the people who work in a process to work on its improvement. For example, people in research, design, sales, and production must work as a team to foresee problems in the product or service produced. In a TQM environment, people are constantly engaged in a critical self-examination of how effectively they are performing the process, and also improving and changing the process if necessary (e.g., Dooris and Lozier, 1990; and Kehoe, 1993).

Delaware Community College provides an example of teamwork. Sixty percent of its students required remedial courses. The high school was viewed as the supplier for the college. The professors and teachers worked together to ensure that fewer and fewer students required remedial

courses. This improvement project commenced in 1993 (Stass, 1993).

3. **Creating "constancy of purpose"** is to provide a unifying focus with the aim for achieving long-term stability by becoming competitive and providing jobs. This notion should provide a unifying focus by emphasizing a long-term committment to a vision. TQM urges the use of compelling and understandable language that gets all parties focused on a common purpose.

TQM activities must be part of the corporate, long-term vision and incorporated into the organization's business plans. The business plan should provide a means for continuous improvement while gauging customers's future needs to ensure that organizations are not only "doing things right" but also "doing the right things".

TQM is not a task that can be delegated to a subordinate or an "add on" to the workload. However, it should become a method of performing the value-added work consistent with the long-term corporate vision (e.g., Tausz, 1993; and Hollins, 1992).

Seymour (1992) suggested that the way to creating "constancy of purpose" throughout an organization is with the mission statement. He elaborated that the mission statement can be looked at as the vision of the leader and should aid as the catalyst to success in maintaining consistency between "what the mission statement says" and

"what management does." The Quality Control Coordinator of Delaware Community College, Ms. Staas, credits its mission statement for providing the college with a much-needed alignment. Her view is that the college went from faculties possessing separate entities, wanting their own resources, and all people doing their own thing to everyone working towards the purpose or mission of the college (Telephone interview, Feb. 1993).

4. **Extending the mindset of quality and ceasing dependence on inspection.** Quality is not something to be measured at intervals but to be built into the process design. Therefore producing quality can be assumed and shared by everyone. If quality is built into the process and everyone involved in the process has the authority to identify inefficiencies, there should be no need for inspection at intervals because each employee would be responsible for continuous improvement of the process.

The TQM movement ceases dependence on inspection by encouraging employees to adopt ownership and responsibility of the process. This encourages the elimination of the present requirements for fragmented inspection and also allows for a clearer view of what is considered "unquality work" and incorporates calculation of "non-conformance costs." (e.g., Cornesky et al., 1992; Heverly & Cornesky, 1992.)

5. **Adopting and instituting leadership.** TQM requires managers or leaders of a new type. They should be characterized as vision-givers, listeners, and team-workers committed to quality and customer needs. Leaders should be patient for long-term results. They must be orchestrators and enablers of people-driven improvements, not powerful figures who require sole command of vertical authority structures. TQM requires the new type of leaders because it empowers people by trusting all employees to act responsibly and giving them appropriate authority (Marchese, 1991). The task of management is to remove the system barriers that prevent people from taking pride in their work. Employees must be encouraged to let managers know where barriers to quality are located and to offer suggestions on how to remove them. It is then the leaders' responsibility to change the system and improve it by their decision-making capabilities (e.g., Cornesky et al., 1992; Seymour & Chaffe, 1992).

6. **Improving constantly by making processes work better and eliminating rework.** TQM views work as interconnected processes. The emphasis is on the institution's processes, not its outcomes. Processes are identified and studied, and then data are gathered to understand how the processes are operating in relation to both internal and external customer needs. This leads to identifying the characteristics of a process that lead to inefficiencies or to unwanted results.

These inefficiencies are then reduced by preventing development of those characteristics. These inefficiencies or unwanted results are what TQM calls "rework." The quality movement calls for elimination of "rework," "scrap," and "complexity" which are described as follows: (a) time spent fixing earlier mistakes; (b) useless work that has to be done over; and (c) utilizing extra steps that add no value, only complexity to the process.

Deming estimated that 85% of all problems are traceable to the process itself (which is usually initiated by management) and only 15% to the people performing them, (e.g., Ferketish & Hayden, 1992; Heverly, 1991).

TQM advocates the need to develop processes that are stable and predictable to ensure continuous quality. This management style holds the conviction of controlled process to ensure quality in contrast to controlled personnel (e.g., Cornesky et al., 1992; Seymour & Chaffe, 1992).

7. **Instituting a vigorous program of education and self-improvement of the individual.** Employee involvement in the TQM process is a key determinant of a successful program. Until everyone is involved in the process of quality improvement, there is a major cost of lost opportunity being carried by the organization. To encourage success of TQM, employees, administrators, and staff must understand the skills of teamwork, problem solving, and their work in relation to customers' needs. As Deming

states, all employees are doing their best, but doing their best is not always good enough without proper training and education (Walton, 1986). Managers must take responsibility for employees, supplying them with the necessary equipment and tools to carry out their jobs effectively, and providing a system to encourage feedback. With this approach, employees will have greater opportunities for success by contributing to the decision-making process, actively pursuing quality-improvement initiatives, and developing their careers within the organization. By helping people improve themselves, an organization benefits. This includes job-related skills and improvement in skills that are not job-related (e.g., Tribus, 1992; Seymour & Chaffe, 1992).

8. **All decisions are based on reliable and factual data.** TQM advocates the elimination of workstandards, such as quotas, merit pay, and MBO systems, and the substitution of TQM leadership (Cornesky et al., 1992, p. 27). TQM justifies the elimination of workstandards by reasoning that to keep driving for the attainment of specific goals only creates frustration and a sense of failure when quotas are not met. This leads to a negative work environment where fear begins to surface and internal competition can result. TQM advocates the use of quality technologies to provide techniques to identify opportunities and to solve problems instead of the attainment of unreachable goals. The use of quality technologies assists individuals and teams in

organizing information, identifying improvement opportunities, analyzing data, and taking action. (e.g., Marchese, 1991; Heverly & Cornesky, 1992.)

For example, the Malcolm Baldrige Quality Award criterion can be employed as a tool for determining the quality index of a company. Cornesky (1993) suggests that before implementing TQM, determining your institution's quality index should be a priority. Bossink, Gieskes, and Pas (cited in Kanji, 1993, p. 5), have developed a tool which will assess the presence or absence of TQM elements of an educational institution. This tool could also aid in determining the quality index.

Shortcomings of TQM

The TQM philosophy has been employed by industry since the 1950s in some countries; however, it is still considered to be a relatively new approach for educational institutions and other publicly funded organizations. Like most new approaches implemented without adequate knowledge, malfunctions are assumed to be faults of the approach. Stanley Spanbauer, President of Fox Valley Technical College, (cited in Cornesky, 1993), stated that while TQM certainly provides the techniques, tools, and philosophy necessary to improve institutions, it is not the panacea to cure all of education's ills. He concluded that TQM is certainly better than other approaches he has experienced in

his 20-year career in administration of postsecondary education, but he was concerned that it is viewed by some as a simple cure to all problems.

A private research firm has determined that only about one-fifth, and at best one-third, of TQM programs in the United States and Europe have achieved significant or tangible improvements in quality, productivity, and competitiveness or financial returns (Harari, 1993). Reasons for this have been identified by Does (cited in the Quality Council of Alberta Newsletter, 1993) and Cornesky (1993). Both identify that numerous forms of TQM have been developed by consultants and quality practitioners which appear easy, straightforward, and marketable. It is marketable with the notion that TQM does not apply to upper management but is delegated to and from middle management down. These numerous forms of TQM are piecemeal activities being sold as the "latest thinking" and they involve an abundance of training and activities to ensure revenues or employment for the consultants and quality practitioners. Some of this piecemeal thinking derived from an article by Harari (1993) is evident in the following three illustrations. According to Does, (cited in Quality Council of Alberta Newsletter, 1993), Harari's observations are valid and observable in Alberta and should be acknowledged as potential shortcomings. According to Harari:

1. TQM focuses people's attention on internal processes rather than on external results. What an internally focused company actually does may result in a well-made product that customers don't want.

According to Deming's philosophy, TQM requires that all processes in an organization are interdependent and must be aligned according to the needs of the internal and external customer. Furthermore, TQM advocates improvement of products and services with the aim of becoming competitive and staying in business to provide jobs.

2. TQM develops its own cumbersome bureaucracy. This point is also supported by McLagan (1991).

TQM encourages all organizational units, teams, and individuals to examine the processes involved in performing their functions. Unfortunately, many people interpret this to mean that all work processes should be routinized. However, what Deming is trying to imply is that all of the organization's employees, as individuals led by senior management, must change in how they view their work. Processes should be refined to meet customer needs efficiently and effectively, and employees are responsible for continuous improvement by always adapting the system to serve the customer better. This does not imply the routinizing of systems.

3. TQM does not demand radical organizational reform.

According to Does, (cited in the Quality Council of

Alberta Newsletter, 1993), if you utilize Deming's philosophy of TQM and develop a flow chart of the processes of an organization, there is great likelihood of finding processes having no customer value or which are totally out of alignment with the aim of the organization. Correction could cause radical organizational reform. Some consultants and practitioners are not addressing this issue because of the probability of disclosing some glaring problems that senior managers may not want to face.

Summary

The philosophy of TQM has aided some multinational companies to radically change the way they do business or face the prospect of perishing. However, research findings have shown that there are shortcomings to the new movement of "Total Quality Management." As McLagan (1991) stated, "Like great civilizations and tragic heroes, the total quality movement contains the seeds of its own destruction. The trick is to keep them from germinating" (p. 31). Some researchers have suggested that one way to keep TQM's shortcomings from germinating is to acquire a profound knowledge of the TQM system before implementation.

Researchers have also proposed that the implementation of TQM concepts could assist in averting or reducing the impact of the following higher education issues of the 1990s: (a) public disenchantment with educational

institutions and the perceived decline of quality in education; (b) decline of financial resources; (c) rise of mediocrity in higher education programs; (d) lack of agreement of what constitutes quality in higher education; and (e) the pressures of accountability. Researchers also indicated that the above concerns with higher education may have contributed to the growth of the "quality movement" which in retrospect augmented TQM to becoming an accepted form of management to some degree in (a) three-quarters of reasonably sized American firms (Harari, 1993); (b) 160 universities and 60 community colleges (Axland, 1992); and (c) many public school systems.

CHAPTER 3

RESEARCH METHODOLOGY

The research methcdology described in this chapter includes a discussion of the procedures used in designing the interview guide and the steps associated with research design.

Development of the Interview Schedule

Borg and Gall (1989) identified several steps which should be taken when preparing an interview schedule. In accordance with their recommendations, this research began by reviewing the objectives of the study. The items included in the schedule were limited to those which would yield data that could be used to address the major research question and the related subproblems. Other steps included generation and selection of items, design of the interview schedule, and pilot-testing the interview schedule.

Generation and Selection of Items

According to Berg (1989, p. 19), an interview schedule increases the ability to provide maximum opportunity for complete and accurate communications of ideas between the researcher and the respondent. He continued that "this notion of accurate communication of ideas" implies that researchers have clear ideas about the type of information they want to access and about the purpose and aims of their

research. To ensure that valid items were included in the interview schedule, questions were developed on the basis of a review of the literature and were specifically designed to ensure that the information provided from the interviews would reveal the extent of support of TQM's elements, which could be considered as either aids or impediments to the implementation of TQM.

Berg (1989, p. 24) stresses the importance of adjusting language to the level of the participants and being aware of the problems that arise with "affectively worded questions, double-barreled questions, and overly complex questions." In accordance with his recommendations, the researcher eliminated all business terminology and the phrase "total quality management" from questions to achieve these purposes: (a) decrease the limitation of researcher bias towards TQM; (b) ensure that intentions of each question have been accurately communicated; and (c) decrease the limitation of interviewees' knowledge of TQM.

Design of the Interview Schedule

According to Borg and Gall (1989), once items have been selected, attention should be focused on designing the interview schedule (questionnaire) in a format that will enhance the achievement of the objectives of the study (p. 424).

With respect to questionnaire design, Borg and Gall (1989) also noted that "questions may be of either the

'closed form' in which the question permits certain responses, or the 'open form' in which the subjects make any response they wish in their own words" (p. 428). They also indicated that while closed questions facilitate the efficient quantification of results, consideration must be given to the objective of the questions.

To draw out the most complete study, the interview schedule employed includes only the open form of questions.

Pilot Testing the Interview Schedule

Borg and Gall (1989) recommend that pilot studies or pretests be conducted. The purpose of pretests is to help the researcher determine if the wording of questions is clear, if the methods to be used for summarizing the data will be appropriate, and if additional questions might be asked. While respondents chosen for the pretests need not be randomly selected, they should be from a population similar to that chosen for the study (Borg and Gall, 1989, p. 435). In accordance with Borg and Gall's recommendations, the two interviewees selected for the pretest interview were from a population similar to that chosen for the study.

The pretest exposed some ambiguous areas. Suggestions regarding word usage were incorporated. The pretest exposed the need for a prior explanation of TQM and this was incorporated. There were no comments on the length of the

interview, so no changes were made in this regard because all items were deemed to be important.

The researcher analyzed the taped pilot interviews to ensure that the data would sufficiently address the problem statement and subproblems, and that sufficient information would be obtained to ascertain the extent to which the TQM elements were supported. The researcher was satisfied with the results. After discussion with her supervisor, the decision was made to make no changes.

A copy of the interview schedule is in Appendix A.

Research Design

To gain information on the aids and impediments to the implementation of TQM, the study primarily used an interview approach with frequency counts to identify the most commonly mentioned impediments. The extent of support for the TQM philosophy was assessed through the inductive data analysis approach.

Ten faculty members were interviewed.

Reliability

Borg and Gall (1989, p. 257) defined reliability of an instrument as the degree of consistency with which it measures the variables it is supposed to be measuring. In other words, the less variation an instrument produces in repeated measurements, the higher is the reliability.

According to Berg (1989, p. 19), an interview schedule increases the ability to provide maximum opportunity for complete and accurate communications of ideas between the researcher and the respondent. He continued that "this notion of accurate communication of ideas" implies that the researchers have clear ideas about the type of information they want to access and about the purpose and aims of their research. To ensure that valid items were included in the interview schedule (Appendix A), the researcher developed the questions on the basis of a review of the literature, the research problem, and the sub-problems. To ensure that there was an accurate communication of ideas, Borg and Gall (1989) recommended that pilot studies or pretests be conducted. Two interviewees were selected in accordance with Borg and Gall's (1989) pretest recommendations that "respondents are not required to be randomly selected but they should be from a population similar to that chosen for the study" (p.435.) The results of the pretest were submitted to the same content analysis that was used for the official interviews.

Validity/Generalizability

The steps taken in item generation and selection increased the validity of the instrument. Results are not generalizable beyond the institution studied.

Data Collection and Analysis

The procedures employed in the study included the selection of a sample and one-hour interviews followed by tabulation and interpretation of the results. These procedures are discussed in this section.

Sample Selection

The population from which the sample for the study was drawn was all full-time faculty members, of selected programs, in a division at a postsecondary institution. The education level of the population was, at minimum, baccalaureate level. A population of 15 was identified as suitable but only 10 were used in the study. The other five were not available because of leave from campus.

Interview Design

Each interview was about one hour in length. The interview schedule was presented after rapport was established. The interviewees were advised that they could discontinue the interview at anytime. Each interviewee was informed that the purpose of the interview was to identify the extent of support for the TQM elements which could assist successful implementation of TQM in the programs of their institution. They were advised of the anonymity precautions that would be adhered to in the writing of the thesis. The interviewees were advised that the interview would be recorded. Each interviewee received an introduction to TQM and how the elements of TQM could be

applied to a classroom or program environment. The introduction was presented in a standard manner to ensure uniformity of TQM information to each interviewee. After the interviews, the conversations were transcribed verbatim, and reviewed with interviewees to ensure that the transcriber had deciphered the information accurately. At this stage, the interviewees were given the option of changing or adding information or withdrawing the transcribed interview.

Data Analysis

Due to the nature of the study, open-ended questions were employed. Therefore, responses to a question were reported by frequency counts which were represented in percentages and then clustered by relating factors. Data were then interpreted in a manner to represent or support the TQM elements. The extent of support for the TQM elements was illustrated by sample quotations, if available.

The support of the TQM elements also can be referred to as either perceived potential aids or impediments to the implementation of the TQM philosophy in postsecondary institutions.

The implications of the extent of support for the TQM elements was correlated to the research literature. The recommendations are based on the extent of support for the TQM elements and the correlated information.

CHAPTER 4

ANALYSIS AND PRESENTATION OF DATA

Introduction

A summary of the data analysis is presented in this chapter. It focuses on the extent of support for the TQM elements within a postsecondary institution. The discussion commences with the TQM elements required and a presentation of the findings with supporting quotations, if available. The discussion concludes with determination from the data analysis of the extent of support for the TQM elements. The presence or absence of the support for the elements is what I define, throughout the thesis, as the perceived potential aids or impediments to implementation of TQM.

Extent of Support for the TQM Elements

Adopting a New Philosophy

The element of **adopting a new philosophy** infers that managers are responsible for the direction and change of an organization. The justification is that managers implement the systems that other employees work within, and therefore they are the only ones who can change the systems.

The interviewees, in this research, identified a total of 41 areas that could be a lack of support for the TQM elements or perceived potential impediments to effective implementation of TQM in a postsecondary setting. Of these

41 areas, 39 or 95% could be categorized as management responsibilities. The 39 areas encompassed systems, or lack of systems, implemented by management. Even though only 40% of the population interviewed actually indicated that they were looking for leadership, the areas identified are management responsibilities. The extent of support obtained for some of the areas were as follows:

1. Nine interviewees agreed that faculty members setting their own standards was a problem.

2. Seven interviewees agreed that the required input and dialogue between 1st and 2nd level courses was not enough or nonexistent. One respondent felt there was no need for such a system.

3. Four of the respondents considered faculty member evaluations to be a popularity contest, while eight noted that data from evaluations were unreliable. Also, one respondent perceived evaluations to be reliable if management took action, while four respondents agreed that the timing and content of the evaluations were wrong. The agreement was that faculty members and textbooks should not be evaluated together and students were not qualified to evaluate outcomes of a course. Two respondents agreed that evaluations considered only what was happening in the classroom, whereas 70% of what should be evaluated happens outside the classroom. To further illustrate, one interviewee said:

> To have an evaluation done sometime during the course and then get feedback when the course is over, to me is a waste of time. If I bombed, I really have the students down because it happened after the fact. I get the report after the fact. I would prefer to see evaluations done a quarter way into the course so I could make changes.

4. Seven interviewees agreed there should be a system to avert entrenchment.

Removal of Barriers

The **breaking down of barriers between departments and encouraging teamwork** are essential because institutions that have many different departments and subunits must know how each department affects the other departments. This element also leads to identifying interdepartmental processes that affect quality of other processes.

Interview data indicated high faculty member concurrence in areas where "cross communication" and a "team building mode of operation" between departments, programs, and within programs could perhaps be valuable in increasing client satisfaction. Some of the following specific findings illustrate how one process could be in conflict with another process and in turn could impede quality.

1. Nine respondents agreed that entrance requirements were not strict enough or were not upheld. One respondent suggested that they were not upheld but were not causing a problem. Two respondents felt that stricter entrance requirements would ensure that students would be more

employable. However, such a change would be in conflict with the institution's mission.

2. Eight interviewees acknowledged that faculty member evaluations were unreliable and therefore did not provide valuable information.

3. Five interviewees agreed that there is good content control between faculty members who teach the same courses. Seven agreed that there should be more control or influence of content in other courses administered within a program. Two believed there was adequate content control, and one concurred that what is taught in other courses does not concern him/her.

4. Eight interviewees concurred that the culture of the entire institution is not conducive to incorporating influence from other departments.

5. Six respondents agreed that the prevailing attitude is that all faculty members are totally responsible for their courses, their programs, and their departments, but not for the entire college. One interviewee expressed the attitude of the institution this way: "This person is responsible for this and that person is responsible for that--not that we are all responsible."

6. Eight respondents agreed (a) that programs do not have a support system designed to encourage faculty members to communicate with each other, and (b) that management should be the initiator.

7. Eight interviewees agreed there would be difficulty in assessing the starting and ending required skills and knowledge of each course.

8. Nine respondents agreed that faculty members are not opposed to teamwork if a method were established.

9. Two respondents recognized that trust levels would have to be established before teamwork could be possible.

To further emphasize the lack of communication between members of the institution and a suggested effect, one interviewee said that "the atmosphere that you work in over time starts to create the atmosphere that you create for your students. For example, lack of feedback for students matches the lack of timely feedback from student evaluations."

Constancy of Purpose

TQM's notion of **"constancy of purpose"** is intended to provide a unified focus to get all employees focused on a common purpose to achieve long-term stability.

The following examples from the interviews suggest difficulties that conceivably arose from the lack of a common purpose.

1. Eight interviewees concurred that a massive cultural change is required because employees are not used to collaborative working methods and because programs do not have a system designed to encourage communication.

2. Eight respondents realized that there was a lack of agreement on similar goals for students.

3. Four participants had not considered changes or innovations because of support services not being available or timely. The interviewees agreed this leads to entrenchment.

4. Seven acknowledged that the problem of entrenchment of faculty members has led to territorialism of courses and defensiveness.

5. Six respondents desired the building of more quality into teaching. This was not accomplished because of lack of accord of what is required, due to lack of coordination and development time.

6. Six interviewees agreed that "what is happening in the classroom" is not looked at from the learners' point of view.

7. Six interviewees concurred that the attitude of some faculty members "not taking ownership of work" sets a poor example for everyone.

One interviewee summed up the lack of "consistent philosophy" and "unifying focus" as follows:

> Over the last three years that leadership has been absent and it has been far too fragmented. Also, with the assumption, and it has some validity, that everybody knows what to do and why they are doing it. They carry on, but the result of that is that there is an apparent assumption that everyone knows not only what to do, but is doing it in the best way. Without that cross communication between disciplines there is no way of checking the validity of that, and we tend to

> go off into our own paradigm of that discipline without any connection to anyone else.

Ceasing Dependency on Inspection

The **ceasing dependency on inspection** on a mass basis is accomplished by extending the mindset of quality. According to Deming, quality cannot be "installed" nor "inspected" into the process (Walton, 1986). The emphasis should be on improving the process itself rather than inspecting the final outcome to assess how to increase quality.

In keeping with the principle of building quality into the process as opposed to inspections, the following examples from the interviews identified areas that could conceivably benefit from adhering to this principle.

1. Eight interviewees concurred that student evaluations are not reliable. The following example illustrates the frustration with trying to "inspect" quality into the process.

> Basically a popularity contest. Some faculty members do not think about it, it is just part of the process. It is well known that when it is time for the evaluations, other faculty members in this institution start building their popularity to come in with some decent ratings. The performance appraisals themselves include only 30% of your work but that is the 30% that you are evaluated on. But the other 70% of things you do outside of classroom just don't seem to count.

2. Nine respondents agreed that faculty members setting individual standards was a problem. The following example illustrates the belief that quality or standards can be "inspected" into the process which runs counter to TQM's

belief about improving the process to improve quality. This was described by an interviewee, "We are a very poorly policed profession and if we could police ourselves better, we could get much more bang for the buck so that our learners would be overwhelmed." As one employee stated, "Quality, I think, comes back to ownership by the person delivering. The faculty member buying into what they do, should be the best they can do. If no one else seems to believe that around you, then it's tough to do that yourself."

3. Seven respondents agreed that entrenchment of faculty members, territorialism of courses, and being defensive were problems. The mentioned aspects impede TQM's required collaborative approach to designing processes for course delivery.

4. Eight interviewees agreed that there would be a problem agreeing on a minimum level of required starting and ending skills of a course. This indicates that inspection is done at intervals.

5. Only two respondents believed that the best evaluation was by demonstrating skill, not just testing. Three agreed that traditional testing took place because of lack of time and class size, while three deemed there was no better way. Two agreed that because they had been doing it this way for so long, change was not necessary. Two agreed that if nobody was doing continuous-control testing in the

classrooms, it could be an indication of the effectiveness or efficiency of the process.

Instituting Leadership

At the heart of the element "**adopting and instituting leadership**" is the notion of trusting all employees to act responsibly and giving them appropriate authority to carry out their functions in an efficient manner. Employees must have the authority to act on inefficiencies or unwanted results.

The following interview data indicated that perhaps this institution does not enable employees to work at their potential:

1. Six interviewees agreed that faculty members were not taking ownership of work. This may indicate that employees could lack the authority to be efficacious.

2. Eight acknowledged that programs did not have support systems to encourage intercommunication to detect inefficiencies of a process. The absence of a system to detect inefficiencies could indicate to employees the lack of authority to perform that function.

3. Three interviewees concurred that management did not support recommendations of faculty members. The following quote exemplifies how some instructors wanted to be empowered in the same way as they empowered students:

> In terms of teaching, the right way to do it is to involve the students from day one, in terms of explaining what has to be done. If they do not like what is happening then maybe we should sit there and

> discuss it. To me this is the whole thing. I can't sit there and say the reason you are doing this "is for the college," or "because you have to," or "it is done this way because it always has been and that is the way it is going to be."

This interviewee implied that, because faculty members were not treated in this manner by management, perhaps this was why students were not involved in the "process of learning." The following quote illustrates the possible result of lack of empowerment:

> In this organization, empowerment is not there below the dean level; so the department heads are not really empowered to do very much. They have very little to do with the tenure system. They have very little to do with evaluations. They have very little to do with the resources of the college. They have some degree of influence on the curriculum design, if they are academic leaders, otherwise they do not. They are un-empowered. And that leaves the instructional staff, who are the actual operators of the programs of the institution, empowering themselves to work within their own sense of discipline where they get a sense of satisfaction.

Improving Constantly

Making processes work better and eliminating rework embodies the principle of **improving constantly**. This is what Porter and Parker (cited in Kanji, 1993) call "managing the organization's processes" in a consistent manner and therefore reaching continuous quality. The following information extracted from the interviews identifies some processes, in the postsecondary institution studied, that could be inefficient:

1. Six respondents agreed that students really do not understand why some curriculum is required, so instructional

staff, rather than administrators, must impart that knowledge and not assume the students know it.

2. Seven respondents concurred that quality of teaching would increase if there were more discussion to coordinate a collaborative approach to discussing content requirements of all courses.

3. Four respondents agreed that faculty members have tried to build quality initiatives into courses but failed to continue because of time constraints and because response time for support services being too slow or just not available. Three respondents believed that management did not support innovative teaching and imagination.

4. Six respondents believed that required additional skills are not developed into the program because of a lack of coordination and development time.

5. Seven interviewees agreed that rework could be avoided if there were more opportunity for coordination and time to exchange ideas.

6. Four interviewees agreed that rework could be avoided if the evaluation system for the student were to be set at a minimum level of performance. Two respondents concurred that rework was required to make the program effective. An interviewee described a situation which leads to what TQM calls "rework":

> Our system allows people who have everything from a 100% mastery down to 50% mastery in whatever it is, and it is within that range that you have an expectation that these people have mastered the material, but if

> they've got 50% in that course and go on to the next course, they are maybe missing half of what is important.

Providing Education

The **instituting of a vigorous program of education and self-improvement of the individual** not only benefits the employees but the organization as well. Deming believes until everyones involved in the process of quality improvement, a major cost of lost opportunity is carried by the organization.

All interviewees agreed that the opportunity for self-improvement through professional development was more than adequate. Interview data indicated areas that could benefit from specific TQM training:

1. Eight respondents concurred that the culture of the entire institution was not conducive to incorporating influence from other departments, programs, or staff.

2. Seven respondents agreed that there was a problem with employee entrenchment, defensiveness, and territorialism of courses.

3. Six interviewees believed that perhaps some additional skills required for students are not taught because of the lack of knowledge of how to impart them by faculty members.

4. Four concurred that faculty members were looking for leadership to provide direction required for self improvement.

Data-based Decision Making

What TQM advocates is that **all decisions be based on reliable and factual data**. The present effectiveness of a process should be measured to determine what improvements should be made. Once the improvements are implemented, measure again and again to determine what changes the improvements have caused. The developed tools used for measurement of changes in a process could be used continually to ascertain the progress of TQM. The aforementioned process is incorporating continuous improvement.

Interview data alluded to these aspects that could benefit from some reliable and factual data:

1. Three interviewees agreed that the present evaluation system does not evaluate the instructional process.

2. Seven interviewees concurred that the input required for prerequisite courses was either not enough or non-existent.

3. Two respondents agreed that, historically, the focus has been to teach the textbook, not to teach a specifically chosen set of requirements per course. Also, two respondents acknowledged that the content of the textbooks controlled the course content more than the faculty members.

Summary

Presented in this section is a summary of the findings concerning the extent of support for the eight elements required for successful implementation of the TQM philosophy.

1. The element of **adopting a new philosophy** is considered to be one of the primary steps to the successful implementation of the TQM philosophy. The interview data identified 41 areas that could be perceived as impediments toward TQM initiatives, with 39 out of the 41 categorized as management responsibilities. This leads to the conclusion that 95% of the impediments identified are in management's control. This is congruent with Deming's (cited in Walton, 1986) suggestion that 94% of the problems in an organization are management responsibilities and in management's control.

2. **Breaking down barriers between departments and encouraging teamwork** are essential for institutions to communicate effectively about how each department's processes affect other departments.

Interviews in this study showed that out of the 41 perceived impediments to the implementation of TQM, 36 could be assessed as not supporting the TQM concept of "breaking down barriers" between departments. Therefore 87% of the identified impediments can be classified as communication problems of various kinds between departments and within departments.

3. In a postsecondary institution the TQM element of **creating a constancy of purpose** for providing a unifying focus for achieving long-term stability means gauging student needs and maintaining present educational levels essential to the student.

The findings strongly suggest that, in the institution studied, not enough attention is directed toward student needs. Of the 41 impediments identified, 36 or 87% could be categorized as having a direct effect on the quality of service provided to students.

4. The TQM element of **extending the mindset of quality and ceasing dependence of inspection on a mass basis** is suggesting that quality should be built into the process design. Everyone then is producing quality because of the consistency of the design. The findings of this study strongly indicate a lack of support for the TQM method of building quality into the process design; there were strong indications that program and course goals varied.

5. The element of **adopting and instituting leadership** embodies the notion of empowering people by trusting all employees to act responsibly and giving them appropriate authority to perform their functions. One task of management is to remove the barriers that prevent people from taking pride in their work.

The findings of this study indicate problems of instructor entrenchment, lack of trust among institutional

members, and the territorialism of courses and departments. Research indicates that such factors contribute to a lack of collegiality and empowerment. The interview data strongly indicate a desire for collegial involvement in the planning and delivery of programs. The finding that only one interviewee indicated strong skepticism towards TQM is further evidence of a strong desire for implementing program quality initiatives and collaborative decision making.

6. **Improving constantly by making processes work better and eliminating rework.** This process requires empowered employees to continually improve the system. As Deming states, empowerment must be felt and not just talked about. All employees must consider themselves unique and all students must be considered unique.

Thirty-six of the 41 perceived impediments were related to lack of communication. Also, there was a strong indication that the lack of communication was due to faculty member entrenchment, time constraints, lack of training, and the culture of the college, none of which is conducive to collaborative decision making. Management must have the authority to design and must design a team-working system to incorporate continuous improvement, or the TQM element of improving constantly by making processes work better will be difficult to achieve.

7. **Instituting a vigorous program of education and self-improvement of the individual.** This not only benefits

the employees but the organization. Employees should be continually acquiring new knowledge and skills required to deal with new material and new methods of production. The same holds true for colleges and universities. They must constantly educate and provide for professional and personal development if they are to stay current in the knowledge and skills required to prepare educated graduates (Cornesky et al., 1992).

The findings strongly indicate that employees in this institution were satisfied with opportunities for self improvement through professional development; however, the following data indicate that training to support the TQM concepts will have to be initiated:

(a) Nine of the participants indicated that they were not opposed to teamwork but that training and time would have to be provided.

(b) Six participants acknowledged that faculty members were not paying attention to students' needs.

(c) Seven of the respondents agreed that it would be beneficial to have some influence on the content of the program courses.

These findings strongly indicate that employees at all levels do not completely understand their jobs in relation to customer needs. The interview data also suggest that there would be difficulty in assessing those needs.

8. **Basing decisions on reliable and factual data.** Deming believes that quotas and numerical goals impede quality more than any other single working condition and yet some educational systems are funded on numerical goals.

As Masters and Leiker (1992) stated, once work standards such as quotas, numerical goals, merit pay, and individual performance appraisals are eliminated, there has to be a reliance on information. This emphasis on the need to rely on information was not strongly supported by the interviewees. Nonetheless, a system designed to gather reliable and factual data could have averted 58% of the perceived impediments.

CHAPTER 5

SUMMARY OF THE STUDY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

Introduction

This study was prompted by the 1990s movement towards defining quality as a means for developing administrative accountability of postsecondary institutions. It is interpretive in nature and relates postsecondary faculty members' views of their work to TQM theory. The findings could provide direction for TQM initiatives in postsecondary institutions.

This thesis provides postsecondary administrators who are involved in long-range quality planning, with information about (a) what the TQM philosophy identifies as essential characteristics or elements of a quality company, (b) the extent of support for these elements that was found in one institution, and (c) a guide to assess the necessary preliminary steps to implementation of TQM.

The Problem

This study attempted to identify the present extent of support for the TQM philosophy in a postsecondary institution. More specifically, the study sought to identify the aids and impediments to the implementation of TQM approaches at a postsecondary institution.

The Population

The population from which the sample for the study was drawn included faculty members of a postsecondary institution. Following approval by the president, research council, and appropriate administrative staff, prospective respondents were contacted by telephone to obtain their commitment. A sample of 15 faculty was identified as suitable; 10 were used based on availability.

The Method

Information for this study was obtained by using semi-structured interviews. The study undertaken by the researcher was of an interpretive nature, therefore the interview schedule questions (see Appendix A) were of an open-form to draw non-directed responses. Two interviewees selected for the pretest interviews were from a population similar to that chosen for the study. The interviewees received an introduction to the TQM elements and how they may be applied to a postsecondary setting.

Responses to an element were reported by frequency counts which were represented in percentages and then clustered by relating factors. Data were then interpreted in a manner to represent or support the TQM elements.

Results of the extent of support for the TQM element were correlated with findings in the researched literature. Recommendations were based on the extent of support for the TQM elements and the correlated information.

The participants of this study identified 41 areas that could be perceived as antithetical to TQM initiatives. Of these 41 areas, 39 can be categorized as management responsibilities; therefore management responsibilities are calculated at 95%, consistent with Deming's 94% prediction. This leads to the conclusion that managers of the organization studied are not perceived to be very sensitive to the requirements of the TQM's new philosophy of "customer satisfaction as the ultimate goal."

According to Cornesky et al. (1992), it is not unusual for presidents, vice-presidents, and deans in institutions of higher education not to be knowledgeable about quality processes and systems. These authors further suggest that implementing TQM and TQI requires an enormous deviation from how most managers supervise in universities and colleges. Cornesky et al., (1992) also maintain that before lasting change toward quality can be realized, managers must be trained in quality processes and systems. Therefore, presidents and their senior managers should undergo a training program on the principles of TQM and TQI. Once the aforementioned training is completed, similar training must be provided to middle managers.

2. **Breaking down barriers between departments and encouraging teamwork** is essential for institutions to communicate effectively about how each department's processes affect other departments. Duplication of effort

Conclusions

In this section findings are related to the research literature.

1. **Adopting a new philosophy** is considered to be one of the primary steps to the successful implementation of the TQM philosophy. Deming, (cited in Walton, 1986), stated that managers must learn their responsibilities and take on leadership to provide for direction and change. If managers are to provide direction and change toward the TQM philosophy, "Clear leadership and vision is required and senior management must demonstrate a commitment to TQM and be actively involved in the TQM process" (Porter and Parker, cited in Kanji, 1993, p. 14.) Customer satisfaction should be the ultimate goal of TQM, with the assurance that the needs and expectations of every internal and external client are met at all times. Therefore, managers must be sensitive to the functions of their established systems to ensure that their internal client (the employee) is not restricted and disempowered by their systems. To adopt the TQM philosophy of customer satisfaction as the ultimate goal, management must be sensitive to the requirements of this change. Managers implement the systems that employees work within and, therefore, are the only ones who can change the systems. Deming (cited in Walton, 1986) suggests that 94% of problems in an organization are the result of poor management or, at least, the responsibility of management.

often occurs because one unit does not know what another department is doing. Constant communication, both formal and informal, is necessary for the efficient operation of the institution. According to Cornesky et al. (1992), central to breaking down all barriers are (a) a sense of belonging, (b) meaningful communication, and (c) integrity in dealings.

Porter and Parker, (cited in Kanji, 1993) concurred with the notion of "meaningful communication" and "personal communication" as a powerful tool critical to TQM success. However, they noted that the need for communication training to assist managers and supervisors was reported by several organizations.

The findings of this study indicated that 36 (87%) of the 41 perceived impediments to the implementation of TQM could be assessed as antithetical to breaking down of barriers.

A high incidence of references to entrenchment on a departmental and individual basis, which were often seen as promoting "territorialism" and "being defensive," is reason to infer that a "sense of not belonging" to the institution as a collegial unit is being felt by employees. This "sense of not belonging" may generate mistrust which leads to further entrenchment and lack of meaningful communication. According to Cornesky et al. (1992), the establishment of trust has to be dependent on results based on long-term

relationships in establishing quality. When trust exists, faculty and staff will feel empowered because they will have greater control over their job functions and making their positions more efficient. The interview data of this study indicated that there was 90% support for teamwork, if supported with training and appropriate time requirements.

To further emphasize the importance of breaking down the barriers between departments through communication, Masters and Leiker (1992) accented the need to eliminate competition between departments; it only leads to win-lose relationships between departments, which eventually become lose-lose situations for the institution and its customers. Departments need to work together to eliminate this mentality and develop a win-win situation to best meet the needs of students and/or internal clients. Masters and Leiker (1992) also suggested that it is the responsibility of managers to foster a cooperative and team-building mode of operation.

3. The TQM element of **creating a constancy of purpose** is to provide a unifying focus for achieving long-term stability by becoming competitive and providing jobs. Seymour (1992) and Masters and Leiker (1992) suggested that in an institution of higher education, managers should concentrate on establishing a core mission and values which should be seen as a roadmap for providing long-term

stability. Within this roadmap there must be a process for innovative ideas to be brought forward.

According to Masters and Leiker (1992), to create a constancy of purpose in a postsecondary institution the needs of the students must be gauged. Procedures for feedback regarding student satisfaction must be established. This is vital to maintaining the relevance of the institution. Resources must be used in a way to maintain the present educational levels essential to the student and to provide for innovation.

Respondents in this study strongly indicated that not enough attention was directed toward student needs, with 36 out of the 41 perceived impediments having direct effect on the quality of service provided to student.

4. The TQM element of **extending the mindset of quality and ceasing dependence of inspection on a mass basis** suggests that quality is built into the process design and then every employee, faculty, and student is producing quality because of the consistency of the design.

According to Masters and Leiker (1992), the whole process should be geared toward meeting the needs of the present customer while keeping an eye on the future by anticipating how those needs will change in one, three, or five years. They continue by suggesting that quality of higher education is often assessed by using students' evaluations of classes and/or faculty members. They

consider that this method may be misleading or unfair and that quality of instruction can be assessed better by examining the process and by obtaining feedback from peers or from students who have taken this instruction and applied it to real world situations. As Deming states (cited in Masters & Leiker, 1992) article, "Suggestions from students concerning the content of a course or the competence of a teacher are accordingly, in my judgment, a reckless idea."

The respondents in this study alluded frequently to the frustration associated with fragmented testing. Following are some of the examples:

(a) Eight of the respondents concurred that student evaluations are not reliable, evaluate only what occurred in the classroom, and it is questionable if it did that accurately. This is consistent with Seymour's (1992) conclusions:

> Many of the standard quality measures used by accrediting agencies, legislative bodies and faculty committees mean little to a student. This particular purchaser of educational services can and does apply his or her own "between the ears" quality test. The test is given everyday in the hallways, offices, and classrooms. And when the institution doesn't make the grade, when it repeatedly fails, a student responds like any other consumer. The manifestations are everywhere: low retention rates, weak alumni support, poor student attendance at campus events, high incidence of vandalism, and academic dishonesty. (pp. 44-45)

(b) Nine interviewees agreed that faculty members setting their own standards is a problem. This

indicates that standards are not built into the course design.

(c) Seven respondents supported the requirement of input for prerequisite courses. This indicates that at present courses do not require minimum levels of competence and that required knowledge, skills and attitudes are not developed progressively in a program.

5. **Adopting and instituting leadership with the aim of supervisors helping people and machines do a better job.** According to Deming, this element is the keystone to the entire success of the TQM philosophy. Administrators must demonstrate a spirit of achievement, while recognizing that organizational excellence is based on innovation, committed people, and the care of students. A central theme (cited by Ferguson, 1980, and Peters, 1988, in Cornesky et al. 1992) is that effective leaders embrace new ideas and challenge old ones. These authors maintain that if ideas are to become part of an actively pursued vision, collegiality must exist between the faculty, administrators, and staff. There must be cooperation to detect continually and make known failures in the "system" and to try to improve daily the quality of teaching, advising, service, and responsiveness. In turn there must be continual performance assessments of the processes and systems as improvements will only occur if everyone is capable of taking risks without fear of failure.

This element embodies the notion that having employees

performing process inspections without authority to act on inefficiencies or unwanted results is futile. Therefore, TQM empowers people by trusting all employees to act responsibly and giving them appropriate authority. The task of managers is to remove the system barriers that prevent people from taking pride in their work. Employees must be encouraged to let management know where barriers are located and to offer suggestions on how to remove them. It is then up to the leaders, for they have the authority to change the system and improve it by their decision-making capabilities (e.g., Cornesky et al., 1992; Seymour & Chaffe 1992.) Masters and Leiker (1992) and Porter and Parker (cited in Kanji, 1993) agree that managers should set an example by demonstrating a commitment to TQM, by being actively involved in the TQM implementation, and by applying the philosophy to their responsibilities. Once they have incorporated the TQM philosophies into their own processes, the improvements should be publicized.

Also, it is further emphasized that although managers need to involve others in the implementation process, they must not delegate overall responsibility and must be seen to drive the process. The above authors suggest that at institutions of higher education the president or top official is the focal point for instituting change and therefore must recognize the obstacles that employees face in trying to do their job. The president must be willing to

make changes to provide a work environment that enables employees to work at their potential. This is what is meant by "management driving the process."

In this study, the interviewees strongly indicated a lack of collegiality and empowerment among institutional members; nevertheless, they also strongly supported more collaborative decision making in the planning and delivery of course requirements. Furthermore, only one participant indicated strong skepticism towards TQM.

6. The element of **improving constantly by making processes work better and eliminating rework** is the process that requires empowered employees to continually improve the system. According to Cornesky et al., (1992),

> If quality is going to improve constantly, all employees should have access to institutional data which should include answers to questions such as: Who are our graduates? Where do they work? What do employers think of our graduates? How have the educational experiences at our institution changed the alumni? Once these answers are known, then everyone in the institution can ask: How can I do a better job for our graduates? Administration is encouraged to ask constantly of every employee: What have you changed today that will help us improve the quality of our graduates? (p. 20)

TQM fosters constantly improvement by empowering employees to constantly improve the process. In higher education this could mean identifying the minimum level of knowledge, skills, and attitudes that each course should provide to the student, and suggesting how each of these could be taught and tested for in a consistent manner. This eliminates "rework" or what TQM calls "unquality work": (a) the

testing to "see where students are at"; and (b) the re-teaching of material already covered. Interviewees strongly indicated that rework could be avoided if there were more opportunity for coordination and time to exchange ideas.

Masters and Leiker (1992) suggest that in the field of higher education, continuous improvement also could involve technological advances that bring about new methods of instruction and better ways of helping students complete their programs. Some of these technological advances could be new methods of delivery to reach a wider or different audience. However, the new methods employed must be used properly in order to improve the system, so training must occur before these systems are implemented. The interviewees of this study indicated that changes or innovations were not considered anymore because lack of support from management, time constraints, and/or support services were too slow or not available.

7. **Instituting a vigorous program of education and self-improvement of the individual** benefits both the employees and the organization. As Walton (1986) conveys, it is not enough to have good people in your organization. They must also be continually acquiring new knowledge and the new skills that are required to deal with new material and new methods of production. The same applies to colleges and universities. They must constantly educate and provide for professional and personal development if they are to

stay current in the knowledge and skills required to prepare educated graduates (Cornesky et al., 1992). The interview findings strongly indicated employee satisfaction with opportunity for self improvement through professional development but the following indicated a need for TQM training.

(a) Nine respondents interviewed indicated that they were not opposed to teamwork but training and time would have to be provided.

(b) Six respondents agreed that faculty members are not paying enough attention to student needs.

(c) Seven respondents acknowledged that it would be beneficial to have some influence in content of all courses in the program.

The above examples strongly indicate that employees at all levels do not completely understand their respective jobs in relation to customer needs, and the interview data also indicate that perhaps there would be difficulty in assessing those needs.

8. **All decisions should be based on reliable and factual data.** Deming believes that quotas and numerical goals impede quality more than any other single working condition and yet entire educational systems are funded on student enrollment. According to Cornesky et al. (1992), a budget based solely on the size of the student body and number of student credit hours generated, encourages

colleges and universities to accept students who are not prepared for the college experience. The repercussions of this type of budgeting could encourage faculty to grade more leniently to maintain current enrollment and faculty. Therefore, decisions not based on reliable and factual data could be the cause of poor quality work. Data obtained in this study did not support Deming's view, since only 10% of the participants identified the "number game" as an impediment to quality education. In contradiction with the above data is the 90% consensus that entrance requirements are not strict enough or are not upheld, and, that this erodes the quality of education. It could very well be that the so-called "number game" is influencing entrance requirements, as the aforementioned research has indicated.

As Masters and Leiker (1992) said, once work standards, such as quotas, numerical goals, merit pay, and individual performance appraisals are eliminated, there has to be a reliance on data-based information.

This reliance on information was not strongly supported by the interview data. It could safely be predicted that a large number of the perceived impediments could be reduced if there were a system in place to gather reliable and factual data about the processes.

The gathering of these data need not be complicated, but a variety of statistical tools, such as diagrams and charts, could help generate the data. The data could

provide techniques to identify opportunities and help solve problems instead of pointing to unreachable goals.

Recommendations for Practice

The recommendations are correlated to the findings of the researched problem, "What are the perceived aids and impediments to the implementation of TQM approaches at a postsecondary institution?"

The factors that were found to support implementation of the TQM initiatives are as follows: (a) Ninety percent support for the TQM philosophy indicates acceptance to change; (b) the strongly supported agreement that the philosophy would be beneficial for the program; and (c) faculty would participate in implementation if training and time were part of the implementation package. According, the training components recommended to ensure that all of the essential elements of the TQM philosophy are adopted by administrators, faculty, and staff are as follows:

1. **TQM training for administrators.** Administrators must be actively involved, and this requires training in quality processes and systems. Once they are actively involved and can demonstrate their progress toward quality improvements, commitment to the TQM philosophy can be communicated throughout the institution. Faculty and staff may then become empowered to proceed with quality initiatives.

2. **Training of faculty and staff.** The TQM philosophy functions successfully only if employees are educated about TQM. Education also will provide the faculty and staff with assurance that their participation is essential for the philosophy to work. Education also helps employees realize that TQM is not just another management tool to increase productivity. They can realize that their contributions are respected and essential to improving quality. Once employees realize the importance of their contributions to the system, they are more likely to make the commitment to TQM initiatives.

As faculty and staff are involved in the actual implementation of quality in a process, trust and empowerment will increase. They should feel that they have greater control over making their work more efficient.

Once faculty and staff experience increases in quality and realize that management is serious about "acting on barriers that rob employees of their right to pride in workmanship," these consequences are likely to result--trust builds, collaborative working methods and team building increase, quality increases, self-efficacy builds, and the culture of the institution adjusts. As Cornesky et al. (1992) asserted, "maximum autonomy and self-leadership are necessary in education institutions if a culture of excellence is to result (p. 115).

Recommendations for Further Research

In view of the increasing emphasis on quality in postsecondary institutions, the following further research is recommended:

1. Research to verify the consistency of the findings of this study. The same research could be applied in other departments of the same institution and/or in other universities, colleges, and technical institutions.

2. A similar study could be applied in the institution of study to measure the changes of support for quality initiatives by employees, as management shifts towards TQM.

3. Once TQM is adopted by the managers of a postsecondary institution, a study could be undertaken to measure the degree of acceptance by employees.

As with all new organizational initiatives, research should be conducted concurrently with adoption of the new change in order to allow for continual monitoring and incorporating of modifications.

Final Comments

Some issues identified by research that could have perpetuated the growth of the quality movement are (a) the perceived decline of quality in education, (b) declining financial resources, and (c) the pressures of accountability. Researchers have proposed that the implementation of the TQM concept could assist in reducing

the mentioned issues of higher education. TQM can provide efficiency while improving effectiveness of the institution and quality of education.

However, in light of the economic times, careful consideration must be given to the decision of implementing TQM. TQM requires a considerable time commitment from employees at all levels and cannot be based on short-term results, therefore, cost effectiveness is not immediate. It requires that all employees of all levels of the entire institution work toward a common focus. This type of management requires a safe non-threatening working environment to empower employees to trust each other and work collaboratively. Providing the above will be the challenge for senior management since the declining of financial resources for postsecondary institutions poses a constant threat to job security which is antithetical to the requirements of a safe non-threatening work environment.

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INTERVIEW SCHEDULE--Appendix A

1. How can quality instruction contribute to the reputation of a postsecondary college?

2. a. What do you perceive as the **"most relevant"** impediment in preventing instruction being as high quality as you would like?

   b. What in your opinion would reduce this impediment?

3. a. To what extent do you feel you have control over the following interconnected processes which affect the quality of teaching/learning in your classroom?

   -the teaching and learning in prerequisite courses
   -entrance requirements
   -course content
   -the obtaining and deployment of resources which are essential for quality instruction

   b. What other interconnected processes affect the quality of teaching/learning in your classroom and how would you reduce the effect?

4. a. In keeping with the quality principle of not measuring quality at intervals but to have quality built into the process design, what changes would be required in the program/classroom/college?

   b. What in your opinion would impede implementation of these changes?

5. a. What is your opinion about the effectiveness of course/instructor evaluations for your college?

   b. Can the results of the evaluations be used to modify the teaching/learning environment of the course evaluated?

   c. Apart from formal evaluations, what other inputs do you use to manage or restructure your classes?

   d. In your opinion what would be the advantage to involving colleagues in the evaluation of teaching?

6. A quality system as described by quality experts is one that identifies these matters:

-The required development of knowledge, skills, and attitudes for each assignment and course in the program.

-How these competencies are to be achieved and evaluated.

-How each course builds on the next to achieve a prescribed whole.

What in your opinion would be the impediments to such a system in your program?

7. a. What additional insights and skills would you hope could be achieved by students within the program?

   b. What are the impediments to accomplishing these additional insights and skills?

8. The quality movement calls for elimination of "rework," which is described as follows:

   -time spent fixing earlier mistakes

   -useless work that has to be done over

   -utilizing extra steps that add no value

   a. 1. Does your program include rework?

      2. How can this rework be avoided?

      3. What difficulties do you see to implementing your suggestions?

9. a. To what extent is the culture at your college conducive to supporting effective teaching and learning?

   b. Can you provide examples?

THE DEMING APPROACH--Appendix B

The following 14-points were taken from Walton (1986) and Cornesky, McCool, Byrnes, & Weber (1992).

1. Create constancy of purpose for improvement of product and service, with the aim of becoming competitive and staying in business, and to provide jobs.

2. Adopt the new philosophy. We are in a new economic age. Western Management must awaken to the challenge, learn their responsibilities, and take on leadership for change.

3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.

4. End the practice of awarding business on the basis of price tag alone. Move toward a single supplier for any one item on the basis of a long-term relationship of loyalty and trust. Minimize total cost by working with a single supplier.

5. Improve constantly and forever every process for planning, production, and service, to improve quality and productivity, and thus constantly decrease costs.

6. Institute training on the job.

7. Adopt and institute leadership. The aim of supervision should be to help people and machines and gadgets do a better job. Supervision of management is in need of overhaul, as well as supervision of production workers.

8. Drive out fear, so that everyone can work effectively for the company.

9. Break down barriers between departments. People in research, design, sales, and production must work as a team for foresee problems of production and those that may be encountered with the product or service.

10. Eliminate slogans, exhortations, and targets for the work force that ask for zero defects or new levels of productivity. Such exhortations only create adversarial relationships, since the bulk of the causes of low quality and productivity belong to the system and thus lie beyond the power of the work force.

11. a. Eliminate work standards (quotas) on the factory floor. Substitute leadership.

b. Eliminate management by objectives. Eliminate management by numbers, and numerical goals. Substitute leadership.

12. a. Remove barriers that rob the hourly worker of his right to pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality.

b. Remove barriers that rob people in management and engineering of their right to pride of workmanship. This means, inter alia, abolishment of the annual or merit rating and of management of objective.

13. Institute a vigorous program of education and self-improvement.

14. Put everybody in the company to work to accomplish the transformation. The transformation is everybody's job.

THE JURAN APPROACH--Appendix C

Cornesky, McCool, Byrnes, and Weber (1992) described the Juran trilogy of planning, controlling, and improving of systems and/or processes as follows:

Quality planning. The end result should be a process that is capable of meeting goals under operating conditions. Quality planning might include identifying internal and external customers; determining customer needs; developing a product or service that responds to those needs; establishing goals that meet the needs of customers and suppliers at a minimum cost; and proving that the process is capable of meeting quality goals under operating conditions.

Quality control. A process for meeting goals under operating conditions requires collecting and analyzing data. To measure the difference between the actual performance before and after the process and/or system was modified, the data should be statistically significant and the processes or systems should be in statistical control. Initial baseline data should be established to verify if a process or system change caused improvement.

Quality improvement. The end result is that the particular process and/or system are at a higher level of quality.

A requirement of the Juran philosophy is that management listen to employees and help them rank the processes and systems that require improvement.

THE CROSBY APPROACH--Appendix D

Like Deming, Philip B. Crosby has 14 steps for quality improvement. As described by Cornesky, McCool, Byrnes and Weber (1992, p. 38), they are as follows:

1. Management commitment--management must be trained in quality processes and systems, and must make it clear that they will support the commitment toward quality.

2. Quality improvement team--should represent all organization's functions.

3. Measurement--establish baseline data to evaluate the improvement process.

4. Cost of quality--cost accounting procedures be pulled together so that all that is described is measured in the same manner all the time.

5. Quality awareness--employees should be informed on the cost of not doing a task correctly the first time. Must become an organization culture.

6. Corrective action--identify problems and take action to correct them. Corrective action is not redoing someone else's mistakes.

7. ZD (zero defect) planning--Planning for ZD day. He recommends that representatives from major suppliers and customers, as well as people from unions and people outside the company be included.

8. Employee education--after management is trained, then train all employees in TQI and TQM philosophy and procedures (30 hours of classroom time and homework).

9. ZD day--achievement towards that day should continually be announced.

10. Goal setting--when data is gathered to measure improvements.

11. Error-cause removal--having employees point out what is wrong with the processes and systems, but not necessarily how to improve them.

12. Recognition--for improvements.

13. Quality councils--to keep organization focused on quality and to prevent slippage to traditional manners of operation.

14. Do it over again--improvement is constant and never complete.

THE IMAI APPROACH--Appendix E

The "Kaizen" or "continuous improvement" approach has long-term, undramatic effects on a process or system. Undramatic, in the sense, that change is gradual and consistent. The approach involves everyone that the process affects, and the resulting group effort is focused on processes and systems, rather than on one person's performance evaluations. This approach requires a great deal of effort by management to maintain the group process but has low monetary investment (Cornesky, McCool, Byrnes, & Weber, 1992).

PROCESS FOR CONDENSING DEMING'S ELEMENTS--Appendix F

The decision of condensing Deming's fourteen elements (see Appendix B) to eight elements was ascertained by researching twenty five sources. The following process was used to identify the eight elements that were pertinent to higher education.

Deming's Elements	Consensus with Element (Total out of 25 in)	Action Taken
1	17	#3 element
2	23	#1 element
3	16	#4 element Deming's 14 and 3 combined and rephrased to match research
4	10	dropped, element did not seem significant to higher education
5	13	#6 element rephrased to match research
6	10	added to Deming's 13 -concepts similar
7	14	#5 element
8	8	added to Deming's 9 (concept of teamwork)
9	19	#2 element
10	5	added to Deming's 9 (concept of teamwork)
11	12	#8 element - rephrased to match research
12	14	added to Deming's 9 (concept of teamwork)
13	13	#7 element
14	14	added to Deming's 3